Sheet 1 of 2

INFORMATION DISCLOSURE CITATION IN AN APPLICATION PURSUANT TO 37 CFR §1.97 & 1.98

Docket Number: 4015-980	Serial Number: 09/945,002	lecnn
Applicant: Paul W. Dent		Qology
Filing Date:	Group:	/Cente
December 5, 2001	2661	_ ਫ

U. S. PATENT DOCUMENTS

Examiner						Filing Date
Initial	Patent No.	Date	Name	Class	Subcl	If Approp.
AMB	A 5,481,572	1996	Skold et al.		<u>i </u>	
	B 5,499,272	11996	Bottomley	<u>.</u>	1	<u> </u>
	C 5,594,941	1997	Dent	Ì	<u>i</u> _	<u> </u>
	ID 5,619,503	1997	Dent		Ì	
	E 5,631,898 .	1997	Dent	j	Ĺ	L
	F 5,642,358	1997	Dent			
	G 5,724,666	1998	Dent		<u>i</u>	
	H 5,812,935	1998	Kay	i	Ì	
	I 5,812,947	1998	Dent		Ĺ	
	J 5,845,199	1998	Longshore	i i	İ .	
	K 15,848,060	1998	Dent			Ĺ
	L [5,867,791	1999	Chambert		Ĭ	
- W	M 5,883,888	1999	St-Pierre	i	Ī	

FOREIGN PATENT DOCUMENTS

	·					Transla	ation
	Patent No.	Date	Name	Class	Subcl	Yes	No
			· ·			$ldsymbol{ld}}}}}}$	L

OTHER DOCUMENTS (including author, title, date, pages, etc.)

1_	1	 Initial Estimation of Communication Efficiency of Indoor Wireless Channels, G. J.
HMB	_	Foschini and R. A. Valenzuela, Wireless Networks 3, pp. 141-154, 1997; Lucent
	4_	Technologies, Bell Labs Innovations, Crawford Hill Laboratory, Holmdel, NJ 07733, USA
9	2	 On Limits of Wireless Communications in a Fading Environment When Using
	 L_	Multiple Antennas, G. J. Foschini and M.J. Gans, Wireless Personal
ZIMY	?	Communications, Vol. 6 (No.3), pp. 311-335, Kluwer Academic Publishers,
1	 l	March, 1998; Lucent Technologies, Bell Labs Innovations, Crawford Hill
<u>+</u>		Laboratory - R137, 791 Holmdel-Keyport Road, Holmdel, NJ 07733-0400, USA



Sheet 2 of 2

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Initial	ner I	l Pate	nt No.	Date	l Name		l Class	Subcl	Filene - A at I	Date
2///	Bi		09,460	11999	Dent	-	Class	1 Subci	l II VE	prop.
Filly			30,248	11999	Langlet et al.		†	 		
\neg			10,742	1999	Dent		† 	!		
\neg			53,874	1999	Mahler		 	 	! 	
\neg	[]		91,282	1999	Langlet et al.		i			
			06,075	1999	Smith et al.		i	Ì		
			31,566	2000	Molnar et al.		i	i		
\perp			38,593	2000	Dent		i	i		
1/		V 6.10)4,933	2000	Frodigh et al.		Ĭ	i		
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Sheet 1 of 1 M PTO-1449 **Docket Number:** | Serial Number: 14015-980 09/945,002 INFORMATION DISCLOSURE CITATION Applicant: IN AN APPLICATION PURSUANT TO Dent, Paul W. 37 CFR §1.97 & 1.98 I Filing Date: | Group: August 31, 2001 2631 **U. S. PATENT DOCUMENTS** Examiner Filing Date Initial Patent No. Date Name Class | Subcl | If Approp. KMB <u>| A |6067324</u> 12000 [Harrison, Robert Mark |2000 |Pollack, Michael A et al B [6144711 C [6473467 12002 lWallace et al D 16434366 12002 lHarrison et al E |4995057 1991 IChung, Hong Y F |5887027 11999 Cohen, Herbert B et al **FOREIGN PATENT DOCUMENTS Translation** Patent No. Date Name Class | Subci | Yes | No *\$\mathb* ← | G |WO 0135548 J2001_JArraycomm Inc LH IWO 9809381 11998 [University Leland Stanford Jr IEP 1087545 12001 | University Singapore I J IWO 9837671 11998 |Globespan Technologies Inc. <u>| K |WO 0197474</u> 12001 | Mitsubishi Electric Corp L |EP 1067710 |2001 |CIT Alcatel 12002 ILucent Technologies Inc. M | EP 1207645 N [EP 0936781 11999 ICIT Alcatel O JEP 1075122 |2001 | Mitsubishi Electric Inf Tech P WO 0199453 12001 | Matsushita Electric Ind Co Ltd Q WO 9921375 11999 |Ericsson Telefon AB OTHER DOCUMENTS (including author, title, date, pages, etc.) R | Ying-Chang, Liang et al: "Transmit Antenna Array Techniques for Cellular CDMA Systems" Personal, Indoor and Mobile Radio Communications, 1998. The Ninth IEEE International Symposium on Boston, MA, USA, 8-11 Sept. 1998, New York, NY, USA< IEEE, US, 8 September 1998, pages 1396-1400, XP010314608 I ISBN: 0-7803-4872-9 S | Kawakami E et al: "Multi-Stage Interference Canceller Systems With Accurate Radio Channel Estimation Under Fading Environment^a 1997 IEEE 6th International Conference on Universal Personal Communication Record. San Diego. 12-16 Oct. 1997, IEEE International Conference on Universal Personal Communications, New York, IEEE, US, vol. 2 conf. 6, 12 October 1997, pages 475-479, XP010248754 ISBN: 0-7803-3777-8

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation not in conformance and not considered. Include copy of this form with next communication to the applicant.

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Art Unit

First Named Inventor

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Examiner Name Attorney Docket Number 4015-980/P12622-US1 Sheet of

			U. S. PATEN	IT DOCUMENTS		
Examiner	Cite	Document Number	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where	
Initials*. No.1		Number-Kind Code 2 (* known)	MM-DD-YYYY	Applicant of Cited Document	Relevant Passages or Relevant Figures Appear	
Allri II	1	US- 5,940,741	08-17-1999	Briancon et al.		
AMB	2	US- 2002/0036996 A1	03-28-2002	Ozluturk et al.		
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Examiner Initials*	Cite No.	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages	1 _e
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5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
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Sheet	1	of	1	Attorney Docket Number	4015-980/P12622-US1	

			U. S. PATEN	IT DOCUM	IENTS	
Examiner Initials*	Cite No.1	Document Number Number-Kind Code ^{2 (V known)}	Publication Date MM-DD-YYYY	A	Name of Patentee or oplicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
4MB	1	US- 5,237,612	08-17-1993	Raith		rigures Appear
	2	US- 5,509,052	04-16-1996	Chia et a	ı).	
V	3	US- 6,181,739 B1	01-30-2001	Ryde et	al.	
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All of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.

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